



The CHRONICLE of the HORSE

Welcome! Sign in or please register

VISIT THE
CHRONICLE STORE

MAGAZINE ▾ NEWS HORSE SPORTS ▾ HORSE CARE ▾ PEOPLE & HORSES ▾ VOICES ▾ PHOTOS & VIDEO MARKETPLACE ▾

February 22, 2007

A Shocking Treatment For Fibrillating Horses

By: Karen Briggs

PRINT SHARE

A supreme equine athlete is described as having "heart." But in fact, equine hearts aren't all that reliable. Cardiac arrhythmias (irregular heart rhythms) are more common in the horse than in any other domestic species. Some of these abnormal rhythms are benign and have little impact, but others can profoundly affect athletic performance or may even be life-threatening. And often, they strike without warning.

When Dr. Penny Rowland's Strike-A-Pose went to the Rolex Kentucky CCI**** in 2002, all seemed well—until the pair got onto the steeplechase course. There, the normally feisty English Thoroughbred suddenly ran out of gas.

"Penny said it felt like he had a governor on," recalled the horse's owner, Dr. Usha Knabe. "She put her foot on the pedal, and there was nothing there!"

Rowland nursed "Percy" through the finish flags and gently through the next roads and tracks, but she withdrew him in the vet box when it became clear the rangy gelding just wasn't up for the demands of Phase D.

As a veterinarian, Rowland had a pretty good idea of what might be going on, and a quick listen with a stethoscope confirmed that Percy's heart was in atrial fibrillation, the most common cardiac condition in horses.

What Is A-Fib?

Atrial fibrillation, or a-fib, is an electrical disorder of the heart rhythm. The regularly organized atrial electrical waves become chaotic, causing the upper half of the heart to twitch irregularly, in a motion some cardiologists have described as "like a bag of worms." Not being able to establish a steady rhythm, the heart cannot pump blood efficiently throughout the horse's body, so he fatigues quickly and becomes incapable of any prolonged athletic effort.

The total lack of regular cardiac rhythm is a tip-off for any veterinarian that atrial fibrillation may be occurring. It's confirmed with an electrocardiogram, which shows an irregular ventricular rhythm, with an undulating baseline of fibrillatory waves of various shapes and sizes.

Atrial fibrillation can sometimes be an indication of underlying structural heart disease. But the vast majority of horses who develop a-fib have no serious cardiac condition, and there's no obvious reason for their hearts to go haywire. (See the sidebar for some causes of atrial fibrillation.) A-fib rarely resolves on its own, and it can persist for months or even years.

Many cases of a-fib go undiagnosed because the symptoms only become obvious when a horse is asked for a high-performance effort. That's why diagnoses of atrial fibrillation are not unusual in race horses and upper-level event horses but are discovered less often in horses

SMARTPAK
Winter Sale
UP TO 60% OFF
Shop Now

PHOTOS & VIDEO VIEW MORE

Tim Ober And Beezie Madden Present On Day 4 Of The 2012 George H. Morris Horsemastership Training Session

ACCESS
WWW.ACCESSCOVER.COM (888) 537-7792
ALL SEASON PROTECTION THAT WORKS ANYWHERE ANYTIME

JOIN OUR COMMUNITY

whose jobs are less demanding. Many lightly used pleasure horses or pasture potatoes may live with a-fib for most of their lives, their owners none the wiser.

Overall, the incidence of atrial fibrillation in horses is estimated to be somewhere between 0.34 and 2.5 percent of the population. (By comparison, a-fib is found in about 0.4 percent of the human population, but the incidence rises to upwards of 6 percent in people over 60 years of age).

Addressing A -Fib

1 | 2 | 3 | 4 | 5 | next >

« Be On The Lookout For Cushing's Disease

Hard Work And Dedication Got Us Through A Strangles Outbreak »

PLEASE SIGN IN OR REGISTER TO POST COMMENTS

HORSE CARE

VETERINARY



- Choose Your Joint Care Weapon Wisely
- Changing The Landscape Of Equine Recovery
- Equine Herpes Virus Outbreak Affects Competition Calendar
- "Dirty Jobs" Goes Behind The Scenes At Kentucky Equine Research

TACK



- Beyond Saddle Soap —Cleaning Non-Leather Equipment
- Taking Care Of Your Tack Doesn't Have To Be Tough
- Richard Castelow Creates Saddles Fit For A Queen

NUTRITION



- Fix It With Feed Part 8: Choose The Right Diet For Your Horse
- Fix It With Feed Part 7: High-Fat Diets Can Solve More Than One Problem
- Fix It With Feed Part 6: Trim Down To Help Prevent Metabolic Issues
- Fix It With Feed Part 5: Dealing With Allergies Can Be A Tricky Business

GROOMING



- Dana Boyd Miller Makes A Living Fixing Hairy Situations
- Debbie Buchanan Enjoys Life In The Fast Lane At Lane Change Farm
- Clark Shipley—International Groom And Globetrotter
- Kate Gillespie Run: A Tight Ship For Team Peters At Arroyo Del Mar

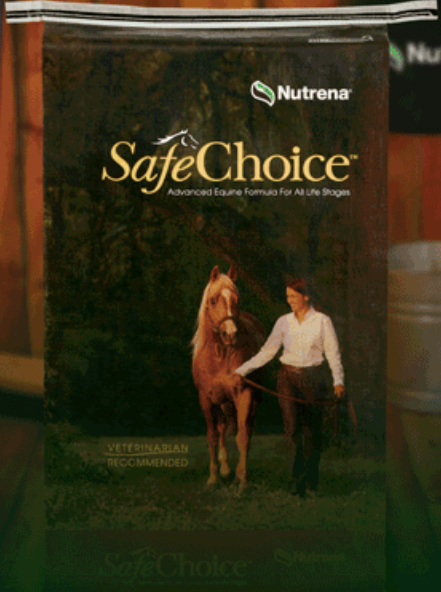
[< PREV](#)[NEXT >](#)



★★★★★

"... remarkable success ..."

~ Sunny ~



Nutrena

SafeChoice
Advanced Equine Formula For All Life Stages

VETERINARIAN RECOMMENDED

 **Nutrena**

MOST POPULAR

- 2012 George H. Morris Horsemastership Training Session Day 5: A Glimpse Of The Future
- 2012 George H. Morris Horsemastership Training Session Day 4: Make It Better
- 2012 George H. Morris Horsemastership Training Session Day 3: Don't Ride Stupid
- 2012 George H. Morris Horsemastership Training Session Day 1: Fresh And Frisky Flatwork
- 2012 George H. Morris Horsemastership Training Session Day 2: Building Blocks Of Success



The CHRONICLE of the HORSE

Welcome! Sign in or please register

VISIT THE
CHRONICLE STORE

MAGAZINE ▾ NEWS HORSE SPORTS ▾ HORSE CARE ▾ PEOPLE & HORSES ▾ VOICES ▾ PHOTOS & VIDEO MARKETPLACE ▾

February 22, 2007

A Shocking Treatment For Fibrillating Horses

By: Karen Briggs

PRINT SHARE SHARE

"Percy had been on a diuretic for a swollen knee before Rolex," recalled Knabe, "which affected his potassium levels. When we drew blood after he was withdrawn in the vet box, it was through the floor. We gave him electrolytes, but when his heart didn't 'convert' [return to a normal rhythm], we took him home to Ontario, and he was treated at the University of Guelph."

Percy received the standard treatment for equine atrial fibrillation: a drug called quinidine, which is administered either intravenously or by stomach tube. Though quinidine is often successful in correcting the cardiac problem, it comes with some serious side effects, including low blood pressure, depression, and frequent bouts of colic. It also has a poor track record with older horses, draft horses, those who suffer recurring bouts of a-fib, and those who've been fibrillating for more than a few months.

Quinidine can only be used in a hospital setting because of its toxicity, and it has a recovery period of seven to 10 days. As much as 15 percent of horses treated with it don't respond to the drug or just can't tolerate it. Signs of quinidine toxicity in these horses can range from mild colic and nasal swelling, to severe tachycardia, laminitis, diarrhea, collapse and death.

"Percy handled the quinidine fine. The drug did what it was supposed to do, and he did return to advanced competition," said Knabe. "But it was fortunate that he didn't need to be back in work until the fall, so he had all summer to recover from the experience."

Dr. Peter Physick-Sheard, who divides his time between the Department of Population Medicine and the Department of Clinical Studies at the University of Guelph, in Guelph, Ont., said, "Though some horses respond well to quinidine, others are very intolerant to it or find the dosages necessary, toxic. Many don't convert to a normal heart rhythm until the drug makes them intensive-care cases. So it's far from an ideal treatment."

That circumstance led Physick-Sheard, colleague Dan Kenney DVM, and graduate student Dr. Kim McGurrian to investigate other means of restoring normal cardiac rhythm in horses. The shock paddles so familiar to many of us from TV medical dramas weren't really an option for horses, Physick-Sheard said.

"There's too much tissue to penetrate, and you'd need so much energy to do it that it would end up being risky to those administering the shock," he said. So they proposed an alternative borrowed from human medicine: delivering a shock to the heart from the inside.

Better Than Quinidine



Winter Sale

UP TO 60% OFF

Shop Now

PHOTOS & VIDEO [VIEW MORE](#)



Tim Ober And Beezie Madden Present On Day 4 Of The 2012 George H. Morris Horsemastership Training Session



WWW.ACCESSCOVER.COM (888) 537-7792

ALL SEASON PROTECTION THAT WORKS ANYWHERE ANYTIME





The CHRONICLE of the HORSE

VISIT THE
CHRONICLE STORE

Welcome! Sign in or please register

Search

MAGAZINE ▾

NEWS

HORSE SPORTS ▾

HORSE CARE ▾

PEOPLE & HORSES ▾

VOICES ▾

PHOTOS & VIDEO

MARKETPLACE ▾

February 22, 2007

A Shocking Treatment For Fibrillating Horses

By: Karen Briggs

PRINT SHARE SHARE

With funding from the Grayson Jockey Club Research Foundation and Ontario Ministry of Agriculture, Food and Rural Affairs, McGurrian and Physick-Sheard pioneered the method that is now becoming the treatment of choice for a-fib worldwide. The shocking alternative, if you will, is a procedure that takes about two hours, including anesthesia.

Two catheters fitted with electrodes are threaded through the veins of the horse and into the right atrium and the pulmonary artery. Once placed precisely with the help of cardiac ultrasonography and radiographs, they administer an electrical shock directly to the heart muscle.

With more than 80 horses treated thus far, the "transvenous electrical cardioversion" has been successful virtually 100 percent of the time. What's more, it has proven effective even in horses who have been in a-fib for months or years, unlike quinidine.

One patient was successfully restored to a normal heart rhythm after fibrillating for 7 1/2 years, according to Physick-Sheard. In addition, the recovery period for horses receiving shock treatment is much shorter than with any other treatment method. In most cases, they can return to light work within a couple of days and are back in full training within a week.

"We follow horses closely for 48 hours after the treatment and have never detected any damage to the heart muscle using this technique," Physick-Sheard said. "It's been four years since we did the first procedure, and at least one of those horses we treated early on is still racing. We have had some relapses, which was to be expected, but they generally respond well to a second cardioversion. The most we've treated any horse, to date, is three times."

As word has spread, the Ontario Veterinary College has been flooded with referrals, and veterinary cardiologists from clinics worldwide have arrived to learn the technique. In 2005, OVC made front-page news when it treated a 9-year-old, 19-hand, black Clydesdale named Phantom, who had travelled from Argyle, Texas. Phantom had been fibrillating for nearly a year and had not responded to any other treatment. Two days after receiving transvenous electrical cardioversion in Guelph, he was on his way home. Weighing in at 1,951 pounds, he is the largest animal to date to be successfully restored to a normal heart rhythm.

Virginia Reef DVM, Mark Whittier and Lila Griswold Allam Professor of Equine Medicine and head of the Section of Sports Medicine and Imaging at the University of Pennsylvania's New Bolton Center, is one of North America's leading equine cardiologists. From her perspective, transvenous electrical cardioversion "is a godsend for horses who can't tolerate quinidine."

There are other drugs in a cardiologist's arsenal, she noted, but they all have patchy success rates and can be just as toxic as quinidine, if not more so.

 **SMARTPAK**
Supplements Simplified
Know your horse is getting the right supplements in the right amounts, every day!



Start SmartPaks Today

PHOTOS & VIDEO

[VIEW MORE](#)



Tim Ober And Beezie Madden Present On Day 4 Of The 2012 George H. Morris Horsemastership Training Session

"Quinidine is still the hallmark treatment because it's less expensive and doesn't require general anesthesia," Reef added. "Shock treatment might cost two or three times what a pharmacological approach would, and it's somewhat labor intensive. But it's certainly a gigantic leap for equine cardiology, there's no question about that."

< previous 1 | 2 | 3 | 4 | 5 | next >



Be On The Lookout For
Cushing's Disease



Hard Work And
Dedication Got Us
Through A Strangles
Outbreak

PLEASE SIGN IN OR REGISTER TO POST COMMENTS

HORSE CARE

VETERINARY



- Choose Your Joint Care Weapon Wisely
- Changing The Landscape Of Equine Recovery
- Equine Herpes Virus Outbreak Affects Competition Calendar
- "Dirty Jobs" Goes Behind The Scenes At Kentucky Equine Research

TACK



- Beyond Saddle Soap—Cleaning Non-Leather Equipment
- Taking Care Of Your Tack Doesn't Have To Be Tough
- Richard Castelow Creates Saddles Fit For A Queen

NUTRITION



- Fix It With Feed Part 8: Choose The Right Diet For Your Horse
- Fix It With Feed Part 7: High-Fat Diets Can Solve More Than One Problem
- Fix It With Feed Part 6: Trim Down To Help Prevent Metabolic Issues
- Fix It With Feed Part 5: Dealing With Allergies Can Be A Tricky Business

GROOMING



- Dana Boyd Miller Makes A Living Fixing Hairy Situations
- Debbie Buchanan Enjoys Life In The Fast Lane At Lane Change Farm
- Clark Shipley—International Groom And Globetrotter
- Kate Gillespie Run: A Tight Ship For Team Peters At Arroyo Del Mar

PREV



NEXT

JOIN OUR COMMUNITY



MOST POPULAR

- 2012 George H. Morris Horsemastership Training Session Day 5: A Glimpse Of The Future
- 2012 George H. Morris Horsemastership Training Session Day 4: Make It Better
- 2012 George H. Morris Horsemastership Training Session Day 3: Don't Ride Stupid
- 2012 George H. Morris Horsemastership Training Session Day 1: Fresh And Frisky Flatwork
- 2012 George H. Morris Horsemastership Training Session Day 2: Building Blocks Of Success

MAGAZINE

Subscribe
Renew A Subscription
Change of Address
Advertise
Archives
This Week's Issue
Report A Missing Issue
Careers

NEWS

Press Releases

HORSE SPORTS

Horse Shows
Eventing
Dressage
Hunting
Juniors
Intercollegiate
Other Disciplines
World Equestrian Games

HORSE CARE

Veterinary
Tack
Grooming
Breeding
Farm Management
Controversy
Nutrition

PEOPLE & HORSES

Interviews
Biographies
Breeds
Lifestyles
10 Questions
Leisure and Trail
Legal
City Guides

VOICES

Columns
Clinic Reports
Hunt Reports
Blogs
Chronicle Forums
Chronicle of My Horse
Horse Radio Network

MARKETPLACE

Horses & Ponies
Real Estate
Stallions
Tack & Other
Chronicle Store



February 22, 2007

A Shocking Treatment For Fibrillating Horses

By: Karen Briggs

PRINT SHARE SHARE

At the New Bolton Center, owners of patients in atrial fibrillation are given a choice of treatments, though certain factors may weight their decision. Reef cites two examples: "Horses who are particularly high-strung and/or have a high resting heartrate are predisposed to a rapidly racing heart after quinidine treatment," she said. "It can sometimes last for hours, and it's very stressful on both the horse and the owners. So if I have a horse like that, I might recommend shock treatment as the way to go."

She added, "Intravenous quinidine works really well on cases who've been fibrillating less than a couple of weeks, but the longer they've been in a-fib, the higher the dosage of the drug must be, which means more risk of toxicity. In cases where it's been going on a while, we now recommend electrical cardioversion."

Prevention Vs. Cure

When the successful Standardbred race horse, Astronomical, went into atrial fibrillation in September 2006 after a race at Flamboro Downs (Ont.), his owner, veterinarian Ian Moore, knew exactly what he wanted to do. He called the University of Guelph the next day and spoke to Physick-Sheard.

The horse had transvenous electrical cardioversion the following Tuesday, jogged on Saturday, and qualified for his next race the following week.

"It's not a life-threatening condition, but obviously it's a career-ending thing for a race horse," Moore said. "The one downside is the general anesthetic, but the fact that you can get going again that quickly is a big plus."

In his own practice, Moore sees about a dozen cases of a-fib a year, but he has had two horses in his own barn, both sons of Astreos, come up with it in the past year. "It's interesting because Astreos himself had [atrial fibrillation] as a youngster," he said. "It's interesting because both Astronomical and the 2-year-old who went into a-fib in my barn were managed the same. There's no other link, really, other than the genetic factor."

Physick-Sheard is also interested in the genetic component of atrial fibrillation. His ultimate goal, he said, is to discover how to prevent the condition rather than to treat it.

"As we explore the reasons why it happens, we can develop a better understanding of how to keep it from happening," he said. "There is another dimension to this—a genetic factor that we are studying in Standardbreds. It's the degree to which it's significant that is being investigated. We do know that the majority of a-fib patients we've treated have been Standardbreds, along with several warmbloods and a few heavy horses. Thoroughbreds, for some reason, aren't as

SMARTPAK Winter Sale UP TO 60% OFF Shop Now

PHOTOS & VIDEO VIEW MORE



Tim Ober And Beezie Madden Present On Day 4 Of The 2012 George H. Morris Horsemastership Training Session

prone to the condition."

What Causes A -Fib?

< previous 1 | 2 | 3 | 4 | 5 | next >

« Be On The Lookout For Cushing's Disease

Hard Work And Dedication Got Us Through A Strangles Outbreak

»

PLEASE SIGN IN OR REGISTER TO POST COMMENTS

HORSE CARE

VETERINARY



- Choose Your Joint Care Weapon Wisely
- Changing The Landscape Of Equine Recovery
- Equine Herpes Virus Outbreak Affects Competition Calendar
- "Dirty Jobs" Goes Behind The Scenes At Kentucky Equine Research

TACK



- Beyond Saddle Soap —Cleaning Non-Leather Equipment
- Taking Care Of Your Tack Doesn't Have To Be Tough
- Richard Castelow Creates Saddles Fit For A Queen

NUTRITION



- Fix It With Feed Part 8: Choose The Right Diet For Your Horse
- Fix It With Feed Part 7: High-Fat Diets Can Solve More Than One Problem
- Fix It With Feed Part 6: Trim Down To Help Prevent Metabolic Issues
- Fix It With Feed Part 5: Dealing With Allergies Can Be A Tricky Business

GROOMING



- Dana Boyd Miller Makes A Living Fixing Hairy Situations
- Debbie Buchanan Enjoys Life In The Fast Lane At Lane Change Farm
- Clark Shipley—International Groom And Globetrotter
- Kate Gillespie Run: A Tight Ship For Team Peters At Arroyo Del Mar

PREV

NEXT

WWW.ACCESSCOVER.COM (888) 537-7792

ALL SEASON PROTECTION THAT WORKS ANYWHERE ANYTIME

WWW.ACCESSCOVER.COM (888) 537-7792

ALL SEASON PROTECTION THAT WORKS ANYWHERE ANYTIME

JOIN OUR COMMUNITY



February 22, 2007

A Shocking Treatment For Fibrillating Horses

By: Karen Briggs

PRINT SHARE SHARE

When a horse develops atrial fibrillation, a complete cardiac workup is called for. According to Virginia Reef DVM, head of the Section of Sports Medicine and Imaging at the New Bolton Center (Pa.), its underlying cause might be as simple as a transient electrolyte imbalance, an indicator of underlying heart disease—or purely a factor of the horse's size and design.

"Horses, by nature, have slow resting heart rates," she explained. "That's just part of the beast. That, combined with the large size of their hearts, especially the large size of the atria (the two upper chambers of the heart), makes them more predisposed to atrial fibrillation than an animal with a more rapid resting beat. They need the large heart to be the supreme athletes that they are, but the design has some drawbacks."

An echocardiogram (an ultrasound of the heart) will sometimes reveal that a horse in a-fib has significant atrial enlargement, or even congestive heart failure (the inability of the heart to pump efficiently). These horses, said Reef, are generally not good candidates for 'conversion' treatments.

"But there are a lot of horses with very small amounts of heart disease, things like mitral regurgitation, in which some blood leaks back through the mitral valves when the heart beats. I'd say about 30 percent of the horses I see in a-fib have something like this, and these horses can be converted, though because of the defect they are at risk of developing atrial fibrillation again."

As horses age, they are more likely to develop minor wear-and-tear heart defects such as atrial or mitral valve enlargement. "These horses sometimes go into a-fib, and we've had good success at New Bolton with converting them [to a normal rhythm] electrically," said Reef.

A significant number of horses who develop atrial fibrillation, however, "have totally normal hearts," Reef said. "They're often young horses in high-intensity athletic work—race horses, event horses, polo ponies. With these animals, fibrillation can sometimes develop out of an electrolyte imbalance, so we'll look at how much potassium is in their urine versus their blood. Some can be treated just by administering electrolytes or adjusting their diet, especially if the left atrium is not enlarged."

Reef added that some horses seem to have insufficient levels of potassium in their systems even when the diet delivers more-than-adequate amounts, a phenomenon that hasn't yet been explained. In addition, atrial fibrillation can sometimes develop as a response to a general anesthetic, either during the anesthesia or afterward.

SMARTPAK
Winter **Sale**
UP TO **60% OFF**
Shop Now

PHOTOS & VIDEO

VIEW MORE



Tim Ober And Beezie Madden Present On Day 4 Of The 2012 George H. Morris Horsemastership Training Session



WWW.ACCESSCOVER.COM (888) 537-7792

ALL SEASON
PROTECTION
THAT WORKS
ANYWHERE
ANYTIME

